

Tuesday, November 19, 2024  
Time of Issue: 0800 hours IST  
(MORNING)

## All India Impact Based Weather Warning Bulletin

Weather Warnings for next 7 days is given below:  
(Graphics for warnings & rainfall distribution (Table 1) are given below the text:

### 19 November (Day 1):

- ❖ **Heavy rainfall ( $\geq 7$  cm)** very likely at isolated places over Tamil Nadu, Puducherry & Karaikal.
- ❖ **Dense fog** in isolated pockets of Himachal Pradesh, Punjab, Haryana-Chandigarh-Delhi, Uttar Pradesh, Rajasthan, Madhya Pradesh in night/morning hours.
- ❖ **Thunderstorm accompanied with lightning** very likely at isolated places over Rayalaseema, Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe.

### 20 November (Day 2):

- ❖ **Dense fog** in isolated pockets of Himachal Pradesh, Punjab, Haryana-Chandigarh-Delhi, Uttarakhand in night/morning hours.
- ❖ **Thunderstorm accompanied with hail** very likely at isolated places over Assam & Meghalaya; **with lightning** at Nagaland, Manipur, Mizoram & Tripura, Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe.

### 21 November (Day 3):

- ❖ **Dense fog** in isolated pockets of Punjab, Haryana-Chandigarh-Delhi, Himachal Pradesh, Uttarakhand in night/morning hours.
- ❖ **Thunderstorm accompanied with hail** likely at isolated places over Assam & Meghalaya with lightning over Nagaland, Manipur, Mizoram & Tripura.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** is likely to prevailing over southern parts of southeast Bay of Bengal and adjoining south Andaman Sea.

### 22 November (Day 4):

- ❖ **Heavy rainfall ( $\geq 7$  cm)** very likely at isolated places over Nicobar Islands.
- ❖ **Dense fog** in isolated pockets of Punjab, Haryana-Chandigarh-Delhi, Himachal Pradesh, Uttarakhand in night/morning hours.
- ❖ **Thunderstorm accompanied with lightning** likely at isolated places over Nagaland, Manipur, Mizoram & Tripura.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** is likely to prevailing over southern parts of southeast Bay of Bengal.

### 23 November (Day 5):

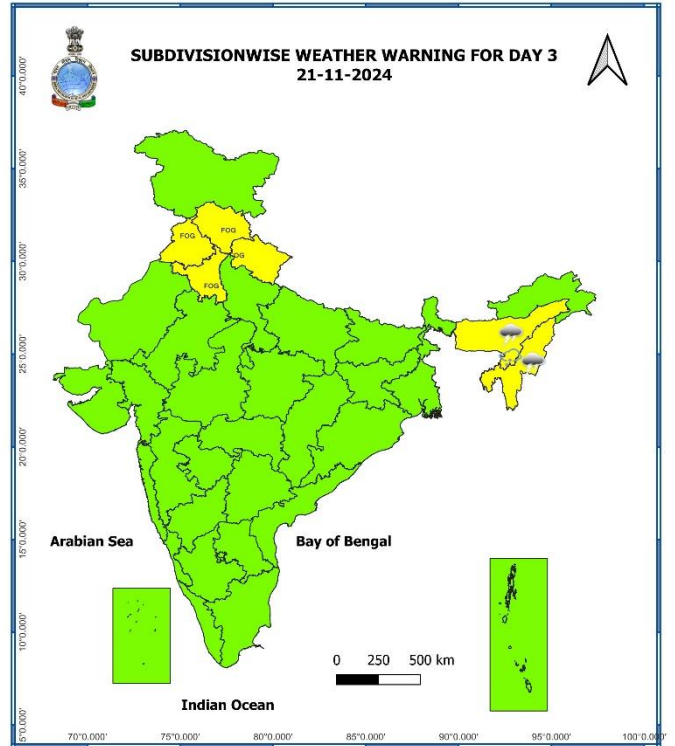
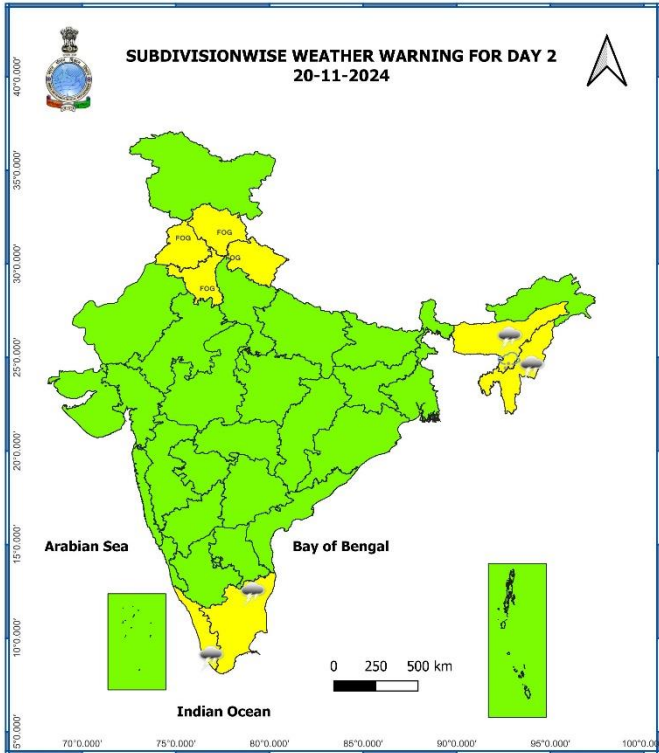
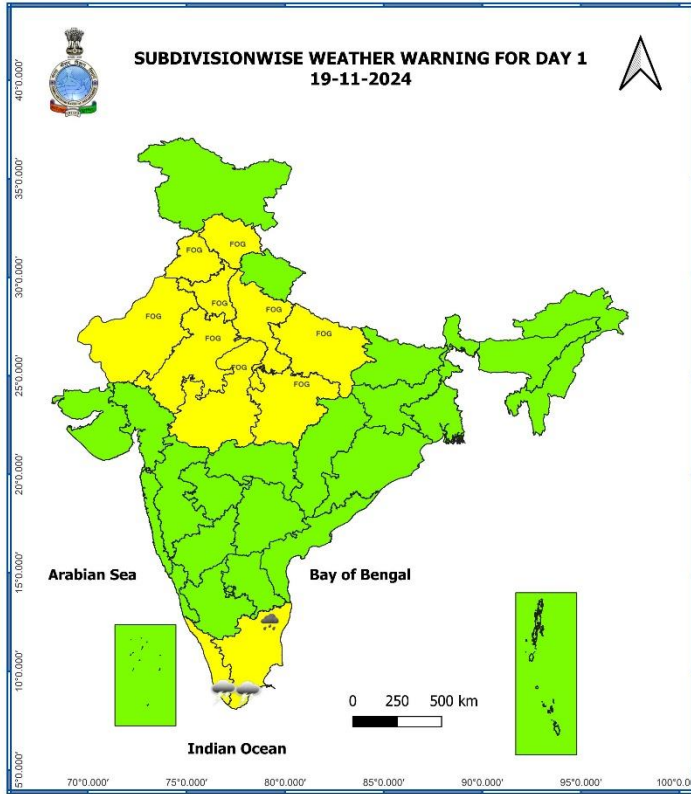
- ❖ **Heavy rainfall ( $\geq 7$  cm)** very likely at isolated places over Nicobar Islands.

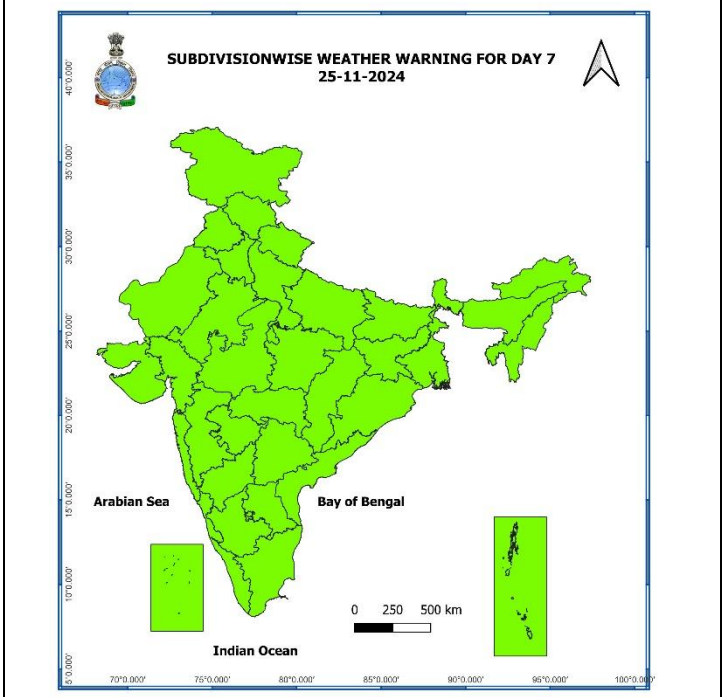
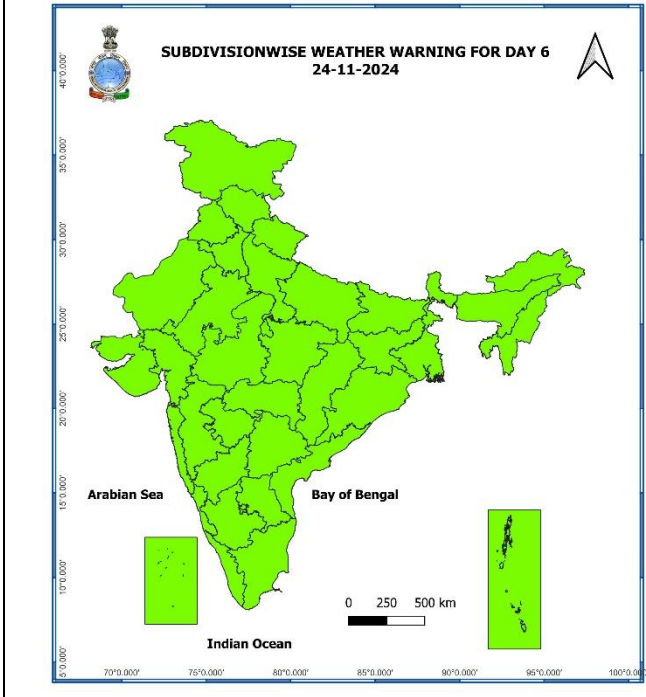
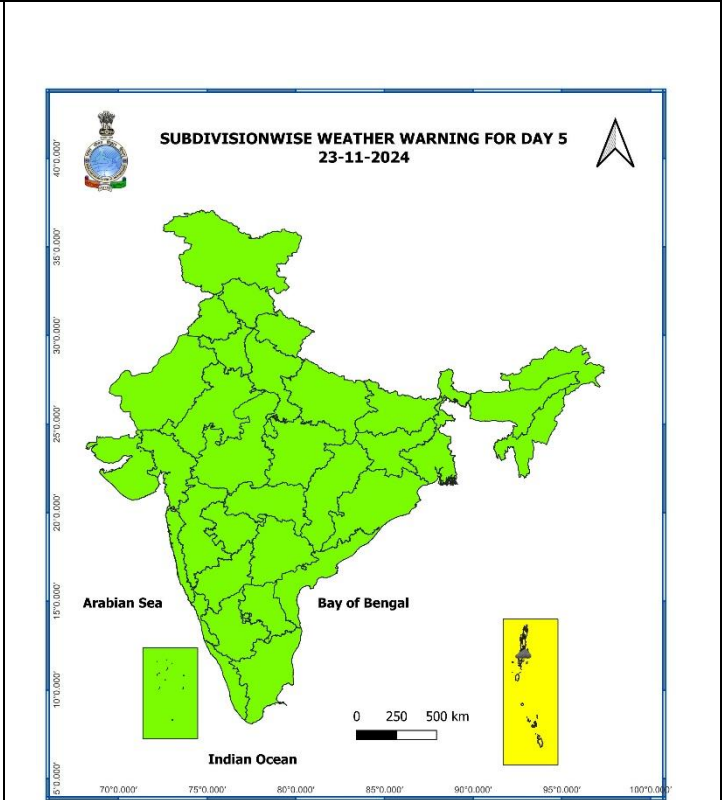
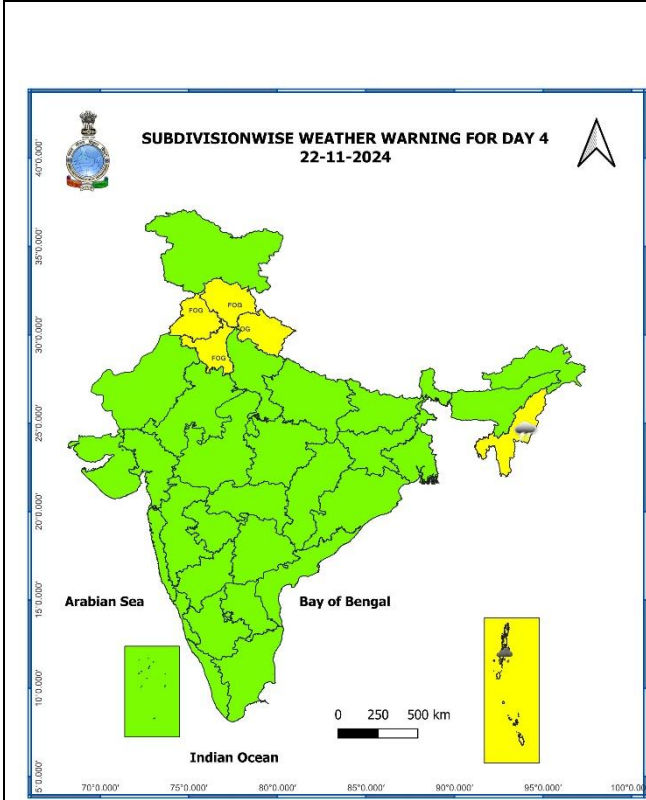
### 24 November (Day 6):

- ❖ **No Warning.**

### 24 November (Day 7):

- ❖ **No Warning.**





- Action may be taken based on **ORANGE AND RED** COLOUR warnings.
- Vulnerable regions likely urban and hilly areas action may be initiated for heavy rainfall warning.
- As the lead period increases forecast accuracy decreases.

Table-1

7 Days Rainfall Forecast								
S. No.	Subdivision	19-Nov	20-Nov	21-Nov	22-Nov	23-Nov	24-Nov	25-Nov
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
1	ANDAMAN & NICOBAR ISLANDS	SCT	SCT	FWS	WS	WS	WS	WS
2	ARUNACHAL PRADESH	DRY	DRY	ISOL	ISOL	ISOL	ISOL	ISOL
3	ASSAM & MEGHALAYA	DRY	ISOL	ISOL	ISOL	DRY	DRY	DRY
4	NAGALAND, MANIPUR, MIZORAM & TRIPURA	DRY	ISOL	ISOL	DRY	DRY	DRY	DRY
5	SUB-HIMALAYAN WEST BENGAL & SIKKIM	DRY	DRY	DRY	DRY	DRY	DRY	DRY
6	GANGETIC WEST BENGAL	DRY	DRY	DRY	DRY	DRY	DRY	DRY
7	ODISHA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
8	JHARKHAND	DRY	DRY	DRY	DRY	DRY	DRY	DRY
9	BIHAR	DRY	DRY	DRY	DRY	DRY	DRY	DRY
10	EAST UTTAR PRADESH	DRY	DRY	DRY	DRY	DRY	DRY	DRY
11	WEST UTTAR PRADESH	DRY	DRY	DRY	DRY	DRY	DRY	DRY
12	UTTARAKHAND	DRY	DRY	DRY	DRY	DRY	DRY	DRY
13	HARYANA CHANDIGARH & DELHI	DRY	DRY	DRY	DRY	DRY	DRY	DRY
14	PUNJAB	DRY	DRY	DRY	DRY	DRY	DRY	DRY
15	HIMACHAL PRADESH	DRY	DRY	DRY	ISOL	ISOL	ISOL	ISOL
16	JAMMU & KASHMIR AND LADAKH	DRY	DRY	DRY	ISOL	ISOL	ISOL	ISOL
17	WEST RAJASTHAN	DRY	DRY	DRY	DRY	DRY	DRY	DRY
18	EAST RAJASTHAN	DRY	DRY	DRY	DRY	DRY	DRY	DRY
19	WEST MADHYA PRADESH	DRY	DRY	DRY	DRY	DRY	DRY	DRY
20	EAST MADHYA PRADESH	DRY	DRY	DRY	DRY	DRY	DRY	DRY
21	GUJARAT REGION	DRY	DRY	DRY	DRY	DRY	DRY	DRY
22	SAURASHTRA & KUTCH	DRY	DRY	DRY	DRY	DRY	DRY	DRY
23	KONKAN & GOA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
24	MADHYA MAHARASHTRA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
25	MARATHAWADA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
26	VIDARBHA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
27	CHHATTISGARH	DRY	DRY	DRY	DRY	DRY	DRY	DRY
28	COASTAL ANDHRA PRADESH & YANAM	DRY	DRY	DRY	DRY	DRY	ISOL	ISOL
29	TELANGANA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
30	RAYALASEEMA	ISOL	DRY	DRY	DRY	DRY	ISOL	ISOL
31	TAMILNADU PUDUCHERRY & KARAIKAL	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL
32	COASTAL KARNATAKA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
33	NORTH INTERIOR KARNATAKA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
34	SOUTH INTERIOR KARNATAKA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
35	KERALA & MAHE	SCT	SCT	SCT	ISOL	ISOL	ISOL	ISOL
36	LAKSHADWEEP	FWS	FWS	SCT	SCT	SCT	SCT	SCT

• As the lead period increases forecast accuracy decreases.

### Agromet advisories for Heavy Rainfall likely over Tamil Nadu, Puducherry & Karaikal:

- ✓ In **Tamil Nadu**, provide adequate drainage facilities for the removal of excess water from rice, cotton, sugarcane, turmeric and vegetable fields, coconut and banana orchards. Undertake propping in sugarcane.
- ✓ Provide mechanical support to banana plants to prevent lodging.

### Impact expected due to dense to very dense fog in the late night /morning hours over parts of Northwest India during next 2-3 days.

#### ❖ Transport and Aviation:

- May affect some airports, highways and railway routes in the areas of met- sub-division.
- Difficult driving conditions with slower journey times.
- Unless taken precautionary measures, it may lead to some road traffic collisions.

#### ❖ Power Sector:

- Chances of Tripping of Power lines in the very dense fog routes.

#### ❖ Human Health:

- Lung related health impacts: Dense fog contains particulate matter and other pollutants and in case exposed it gets lodged in the lungs, clogging them and decreasing their functional capacity which increases episodes of wheezing, coughing and shortness of breath.
- Impact on people having asthma bronchitis: Long time exposure to dense fog may cause respiratory problem for people having asthma bronchitis and other lung related health problems.
- Eye Irritation: Dense fog contains pollutions of various types and these Pollutants in the air if exposed may tend to irritate the membranes of the eye causing various infections leading to redness or swelling of the eye.

#### Action suggested:

#### ❖ Transport and Aviation:

- Be careful while driving or outing through any transport.
- Use fog lights during driving.
- Be in touch with airlines, railways and state transport for schedule of your journey.

#### ❖ Power Sector:

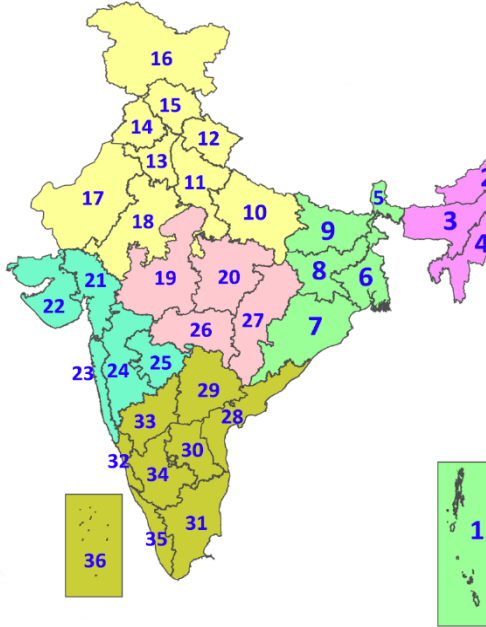
- To keep ready Maintenance Team
- Human Health: To avoid outing until unless emergency and to cover the face.

## Legends & abbreviations:

- ❖ **Heavy Rain:**64.5-115.5mm; **Very Heavy Rain:**115.6-204.4mm; **Extremely Heavy Rain:** >204.4mm.
- ❖ **Obsy.:** Observatory; **AWS:** Automatic Weather Station; **ARG:** Automatic Rain Gauge; **dist.:** District; **NH:** National Highway; **KVK:** Krishi Vigyan Kendra; **DVC:** Damodar Valley Corporation; **PTO:** Part Time Office, **Aero:** Aerodrome, **IAF:** Indian Air Force.
  
- ❖ **Region wise classification of meteorological Sub-Divisions:**
  - ✓ **Northwest India:** Western Himalayan Region (Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh and Uttarakhand); Punjab, Haryana-Chandigarh-Delhi; West Uttar Pradesh, East Uttar Pradesh, West Rajasthan and East Rajasthan.
  - ✓ **Central India:** West Madhya Pradesh, East Madhya Pradesh, Vidarbha and Chhattisgarh.
  - ✓ **East India:** Bihar, Jharkhand, Sub-Himalayan West Bengal & Sikkim; Gangetic West Bengal, Odisha and Andaman & Nicobar Islands.
  - ✓ **Northeast India:** Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.
  - ✓ **West India:** Gujarat Region, Saurashtra & Kutch, Konkan & Goa, Madhya Maharashtra and Marathawada.
  - ✓ **South India:** Coastal Andhra Pradesh & Yanam, Telangana, Rayalaseema, Coastal Karnataka, North Interior Karnataka, South Interior Karnataka, Kerala & Mahe, Tamil Nadu, Puducherry & Karaikal and Lakshadweep.

## LEGENDS

1. अंडमान और निकोबार द्वीपसमूह
2. अरुणाचल प्रदेश
3. असम और मेघालय
4. नागालैंड, मणिपुर, मिजोरम और त्रिपुरा
5. उप-हिमालयी पश्चिम बंगाल और सिक्किम
6. गंगीय पश्चिम बंगाल
7. ओडिशा
8. झारखंड
9. बिहार
10. पूर्वी उत्तर प्रदेश
11. पश्चिम उत्तर प्रदेश
12. उत्तराखंड
13. हरियाणा, चंडीगढ़ और दिल्ली
14. पंजाब
15. हिमाचल प्रदेश
16. जम्मू और कश्मीर और लद्दाख
17. पश्चिम राजस्थान
18. पूर्वी राजस्थान
19. पश्चिम मध्य प्रदेश
20. पूर्वी मध्य प्रदेश
21. गुजरात
22. सौराष्ट्र
23. कोंकण और गोवा
24. मध्य महाराष्ट्र
25. मराठवाड़ा
26. विदर्भ
27. छत्तीसगढ़
28. तटीय आंध्र प्रदेश और यनम
29. तेलंगाना
30. रायलसीमा
31. तमिलनाडु, पुडुचेरी और कराईकल
32. तटीय कर्नाटक
33. आंतरिक उत्तरी कर्नाटक
34. आंतरिक दक्षिणी कर्नाटक
35. केरल और माहे
36. लक्षद्वीप



1. Andaman & Nicobar Islands
2. Arunachal Pradesh
3. Assam & Meghalaya
4. Nagaland, Manipur, Mizoram & Tripura
5. Sub-Himalayan West Bengal & Sikkim
6. Gangetic West Bengal
7. Odisha
8. Jharkhand
9. Bihar
10. East Uttar Pradesh
11. West Uttar Pradesh
12. Uttarakhand
13. Haryana, Chandigarh & Delhi
14. Punjab
15. Himachal Pradesh
16. Jammu & Kashmir and Ladakh
17. West Rajasthan
18. East Rajasthan
19. West Madhya Pradesh
20. East Madhya Pradesh
21. Gujarat
22. Saurashtra
23. Konkan & Goa
24. Madhya Maharashtra
25. Marathwada
26. Vidarbha
27. Chhattisgarh
28. Coastal Andhra Pradesh & Yanam
29. Telangana
30. Rayalaseema
31. Tamilnadu, Puducherry & Karaikal
32. Coastal Karnataka
33. North Interior Karnataka
34. South Interior Karnataka
35. Kerala & Mahe
36. Lakshadweep

## SPATIAL DISTRIBUTION (% of Stations reporting)

% Stations	Category	% Stations	Category
76-100	Widespread (WS/Most Places)	26-50	Scattered (SCT/A Few Places)
51-75	Fairly Widespread (FWS/Many Places)	1-25	Isolated (ISOL)

- |                      |                      |              |
|----------------------|----------------------|--------------|
| Fog                  | Heavy Snow           | Cold Wave    |
| Heavy Rain           | Dust Storm           | Cold Day     |
| Very Heavy Rain      | Heat Wave            | Ground Frost |
| Extremely Heavy Rain | Warm Night           |              |
| Thunder & Lightning  | Hot Day              |              |
| Hailstorm            | Hot & Humid          |              |
| Dust Raising Winds   | Strong Surface Winds |              |

### COLOUR CODED WARNING

No Warning (No Action)
Watch (Be Aware)
Alert (Be Prepared To Take Action)
Warning (Take Action)

### Probabilistic Forecast

Terms	Probability of Occurrence (%)
Unlikely	< 25
Likely	25 - 50
Very Likely	50 - 75
Most Likely	> 75

\* Red colour warning does not mean "Red Alert", Red colour warning means "Take Action".  
Forecast and Warning for any day is valid from 0830 hours IST of day till 0830 hours IST of next day.  
For more details, kindly visit <https://mausam.imd.gov.in> or contact: 011-2434-4599  
(Service to the Nation since 1875)



## DEFINITION/CRITERIA

### Rain/ Snow \*

**Heavy:** 64.5 to 115.5 mm/cm \*  
**Very Heavy:** 115.6 to 204.4 mm/cm\*  
**Extremely Heavy:** > 204.4 mm/cm \*

### Heat Wave

**When maximum temperature of a station reaches  $\geq 40^\circ\text{C}$  for plains and  $\geq 30^\circ\text{C}$  for hilly regions**  
**(a) Based on Departure from normal**

**Heat Wave:** Maximum Temperature Departure from normal  $4.5^\circ\text{C}$  to  $6.4^\circ\text{C}$ .  
**Severe Heat Wave:** Maximum Temperature Departure from normal  $\geq 6.5^\circ\text{C}$

**(b). Based on Actual maximum temperature**

**Heat Wave:** When actual maximum temperature  $\geq 45^\circ\text{C}$ .  
**Severe Heat Wave:** When actual maximum temperature  $\geq 47^\circ\text{C}$

**(c). Criteria for heat wave for coastal stations**

When maximum temperature departure is  $>4.5^\circ\text{C}$  from normal. Heat Wave may be described provided maximum temperature  $\geq 37^\circ\text{C}$

### Warm Night

**When maximum temperature remains  $40^\circ\text{C}$**

**Warm Night:** When minimum temperature departure  $4.5^\circ\text{C}$  to  $6.4^\circ\text{C}$ .  
**Severe Warm Night:** When minimum temperature departure  $>6.4^\circ\text{C}$ .

### Cold Wave

**When minimum temperature of a station  $\leq 10^\circ\text{C}$  for plains and  $\leq 0^\circ\text{C}$  for hilly regions.**  
**(a). Based on departure**

**Cold Wave:** Minimum Temperature Departure from normal  $-4.5^\circ\text{C}$  to  $-6.4^\circ\text{C}$ .  
**Severe Cold Wave:** Minimum Temperature Departure from normal  $\leq -6.5^\circ\text{C}$

**(b) Based on actual Minimum Temperature (for Plains only)**

**Cold Wave :** When Minimum Temperature is  $\leq 4.0^\circ\text{C}$   
**Severe Cold Wave:** When Minimum Temperature is  $\leq 2.0^\circ\text{C}$

**(c) For Coastal Stations**

When Minimum Temperature departure is  $\leq -4.5^\circ\text{C}$  & actual Minimum Temperature is  $\leq 15^\circ\text{C}$

### Cold Day

**When minimum temperature of a station  $\leq 10^\circ\text{C}$  for plains and  $\leq 0^\circ\text{C}$  for hilly regions**  
**Based on departure**

**Cold Day:** Maximum Temperature Departure from normal  $-4.5^\circ\text{C}$  to  $-6.4^\circ\text{C}$ .  
**Severe Cold Day:** Maximum Temperature Departure from normal  $\leq -6.5^\circ\text{C}$

### Fog

**Phenomenon of small droplets suspended in air and the horizontal visibility  $< 1\text{km}$**

**Moderate Fog:** When the visibility between 500-200 metres  
**Dense Fog:** when the visibility between 50- 200 metres  
**Very Dense Fog:** when the visibility  $< 50$  metres

### Thunderstorm

**Sudden electrical discharges manifested by a flash of light (Lightning) and a sharp rumbling sound (thunder)**

### Dust/Sand Storm

**An ensemble of particles of dust or sand energetically lifted to great heights by a strong and turbulent wind.**

### Frost

**Ice deposits on ground**

Air temperature  $\leq 4^\circ\text{C}$  ( over Plains)

### Squall

**A strong wind that rises suddenly, lasts for atleast 1 minute.**

**Moderate:** Wind speed 52-61 kmph  
**Severe:** Wind speed 62-87 kmph  
**Very Severe:** Wind speed  $>87$  kmph

### Sea State

**Effect of various waves in the sea over specific area**

**Rough to very rough:** Wind speed 41-62 kmph (22-33 knots) & Wave height 2.5-6 metre  
**High to very high:** Wind speed 63-117 kmph ( 34-63 knots) & Wave height 6-14 metre  
**Phenomenal:** Wind speed  $>117$  kmph ( $>63$  knots) & Wave height  $>14$  metre

### Cyclone

**Cyclonic Storm:** Wind speed 62-87 kmph (34-47 knots)  
**Severe Cyclonic Storm:** Wind speed 88-117 kmph (48-63 knots)  
**Very Severe Cyclonic Storm:** Wind speed 118-165 kmph (64 - 89 knots)  
**Extremely Severe Cyclonic Storm:** Wind speed 166-220 kmph (90 -119 knots)  
**Super Cyclone Strom:** Wind speed  $>220$  kmph ( $>119$  knots)